



A Study on the Impact of AI and Automation on Job Roles

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Abstract—

Artificial Intelligence (AI) and automation technologies are rapidly transforming the nature of work in modern organizations. Many industries are adopting AI tools to improve productivity, reduce errors, and enhance operational efficiency. However, the increased use of automation has also created concerns related to job security, workforce adaptation, and the need for new skills. The main objective of this research is to study the impact of Artificial Intelligence and automation on job roles, productivity, and employee skill requirements. The study is based on primary data collected from 81 respondents using a structured questionnaire. The collected data was analyzed using percentage analysis and tabular representation methods to understand employee perceptions regarding AI adoption. The findings of the study show that most respondents believe Artificial Intelligence improves productivity, saves time, and enhances decision-making processes. Many respondents also agreed that automation reduces workload and improves work accuracy. However, a small percentage expressed concerns about job displacement and the need for continuous skill development. The study concludes that Artificial Intelligence and automation have a significant impact on job roles. While these technologies improve efficiency and create new career opportunities, they also require employees to upgrade their technical skills and adapt to changing workplace environments

Keywords-

Artificial Intelligence, Automation, Job Roles, Productivity, Workforce Adaptation, Skill Development, Technology Adoption



I. INTRODUCTION

Artificial Intelligence (AI) and automation technologies have become an important part of modern workplaces. Organizations across different industries are increasingly adopting AI tools to improve productivity, efficiency, and decision-making processes. These technologies help in performing repetitive tasks quickly and accurately, reducing human effort and improving operational performance. In recent years, the rapid growth of digital technologies has significantly changed the nature of job roles. Many traditional tasks that were previously performed manually are now automated using AI systems. Automation allows organizations to complete tasks faster, reduce operational costs, and improve service quality. As a result, businesses are becoming more dependent on technology-driven processes.

Artificial Intelligence refers to the ability of machines and computer systems to perform tasks that usually require human intelligence. These tasks include data analysis, problem-solving, decision-making, and pattern recognition. Automation, on the other hand, involves the use of machines and software to perform tasks automatically with minimal human intervention. Together, AI and automation play a vital role in transforming workplace operations.

The adoption of AI technologies has created both opportunities and challenges for employees. On one hand, AI improves productivity, reduces workload, and increases accuracy in job tasks. On the other hand, it raises concerns about job security and the need for continuous learning. Employees are required to acquire new technical skills to remain competitive in technology-driven work environments.

The growing importance of Artificial Intelligence highlights the need to understand its impact on job roles and employee performance. Organizations must ensure proper training and support to help employees adapt to technological changes. Understanding the relationship between AI adoption and job performance is essential for long-term organizational success.

Therefore, this research aims to study the impact of Artificial Intelligence and automation on job roles, employee productivity, and skill requirements. The study provides insights into employee perceptions

regarding the advantages and challenges associated with AI technologies in modern workplaces.

II. LITERATURE REVIEW

Artificial Intelligence and automation have become important tools in modern organizations. Many researchers have studied the role of AI in improving productivity and efficiency in workplaces. Previous studies indicate that organizations are increasingly depending on technology to improve performance and reduce operational costs.

According to various studies, Artificial Intelligence helps organizations in analyzing large amounts of data quickly and accurately. Researchers have found that AI-based systems improve decision-making by providing data-driven insights. This helps managers make better decisions and reduces the chances of human errors. Several studies have focused on the impact of automation on job roles. Researchers have observed that automation replaces repetitive and routine tasks, allowing employees to focus on more creative and strategic activities. However, some studies also highlight concerns about job displacement due to the increasing use of automation technologies.

Research has also shown that the adoption of AI requires employees to develop new technical skills. Many organizations provide training programs to help employees understand AI tools and improve their performance. Continuous learning has been identified as an important factor in adapting to technological changes. In addition, studies have highlighted the role of Artificial Intelligence in improving productivity and reducing workload. Automation systems help complete tasks faster and improve work quality. This results in higher efficiency and better performance within organizations.

Despite the growing use of AI technologies, some research studies identify challenges such as lack of technical knowledge, high implementation costs, and resistance to change among employees. These challenges may affect the successful adoption of AI systems.

Research Gap:

Although many studies discuss the benefits of Artificial Intelligence and automation, limited research focuses specifically on the impact of AI on



job roles and employee perceptions across different sectors. This study aims to address this gap by analyzing employee responses regarding the use of AI technologies and their impact on job performance and skill requirements.

III. METHODOLOGY

This research study is descriptive in nature and focuses on understanding the impact of Artificial Intelligence and automation on job roles. A quantitative research approach is used in this study to collect and analyze numerical data from respondents.

Both primary and secondary data sources were used in this research. Primary data was collected directly from respondents using a structured questionnaire. The questionnaire included close-ended questions based on a Likert scale to measure the opinions of respondents regarding the use of Artificial Intelligence and automation technologies.

A total of 80 responses were collected from individuals belonging to different educational and occupational backgrounds. These responses provided valuable insights into the awareness and usage of AI technologies in workplaces.

Secondary data was collected from books, research journals, websites, and online sources related to Artificial Intelligence and automation. This helped in building a strong theoretical background and understanding previous studies related to the topic.

The sampling technique used in this study is convenience sampling, where respondents were selected based on availability and willingness to participate. Although this method is simple and quick, it may not represent the entire population.

The collected data was analyzed using Microsoft Excel. Basic statistical techniques such as percentage analysis, tabular representation, and graphical presentation were used to interpret the results clearly and effectively.

In this study, Artificial Intelligence and automation are considered as independent variables, while job roles, productivity, and employee performance are considered as dependent variables. The relationship between these variables was examined to understand the impact of AI technologies on job roles.

Some limitations were also observed in the research. The sample size was limited to 81 respondents, and the responses were based on personal opinions, which may sometimes contain bias. Despite these limitations, the methodology helped in collecting useful data and analyzing it effectively.

IV. RESULTS AND DISCUSSION

This section presents the results obtained from the data collected through the questionnaire and explains their significance in relation to the objectives of the study. The analysis is based on responses collected from 81 respondents belonging to different educational and occupational backgrounds.

The results show that a large number of respondents are aware of Artificial Intelligence and automation technologies. Most respondents indicated that they have basic knowledge of AI tools and understand their role in modern workplaces. This indicates that awareness about Artificial Intelligence is increasing among individuals across different sectors.

One of the key findings of the study is that Artificial Intelligence significantly improves productivity. A majority of respondents agreed that AI systems help in completing tasks faster and more efficiently. Automation reduces the time required to perform repetitive tasks, allowing employees to focus on more important and creative activities.

The study also highlights that automation reduces workload and improves work accuracy. Many respondents agreed that AI tools help in minimizing human errors and improving the quality of output. This shows that AI technologies contribute to better operational efficiency and reliability in organizations.

Another important finding of the study is related to skill development. A significant number of respondents agreed that employees need to acquire new skills to effectively use Artificial Intelligence technologies. Continuous learning and technical training were identified as essential factors for adapting to automation systems.

The findings also indicate that Artificial Intelligence plays an important role in improving decision-making processes. Respondents agreed that AI systems analyze large amounts of data and provide accurate information that helps managers make better



decisions. However, the study also identified certain concerns related to job security. Some respondents expressed fear that automation may replace traditional job roles in the future. This indicates that while AI offers many benefits, it also creates uncertainty among employees regarding employment stability.

In addition, the results show that organizations face certain challenges while implementing Artificial Intelligence technologies. These challenges include lack of training, technical complexity, and high implementation costs. Addressing these challenges is necessary for successful adoption of AI systems.

Overall, the results of the study indicate that Artificial Intelligence and automation have a positive impact on job roles, productivity, and organizational performance. At the same time, the need for skill development and proper planning is essential to manage the challenges associated with technological changes

V. CONCLUSION

This research study was conducted to understand the impact of Artificial Intelligence and automation on job roles and employee performance. Based on the analysis of collected data, it is clear that Artificial Intelligence has become an important tool in modern workplaces.

The study shows that the use of Artificial Intelligence improves productivity, reduces workload, and enhances work accuracy. Automation systems help employees complete tasks faster and reduce the chances of human errors. This results in improved efficiency and better organizational performance.

Another important conclusion of the study is that Artificial Intelligence supports better decision-making processes. By analyzing large volumes of data, AI systems provide accurate information that helps organizations make effective decisions. This leads to improved performance and better management of resources.

The research also highlights the importance of skill development in adapting to technological changes. Employees need to acquire technical knowledge and continuously upgrade their skills to remain competitive in AI-driven workplaces.

However, the study also identifies certain concerns related to job security. Some employees fear that automation may replace traditional job roles. Therefore, organizations must provide proper training and support to help employees adapt to technological changes and reduce uncertainty.

Overall, it can be concluded that Artificial Intelligence and automation have a significant impact on job roles. While these technologies improve efficiency and create new opportunities, proper planning and employee training are necessary to ensure successful implementation

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